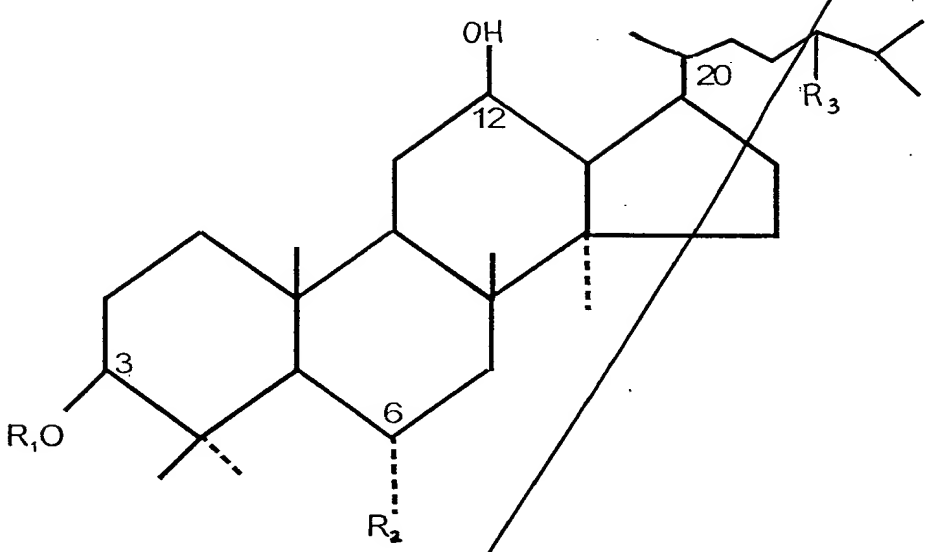
WHAT IS CLAIMED IS:

1. A sapogenin according to the formula:



wherein R1 is H, glc or glc^{1-2} glc, R2 is H or OH, R3 is H or OH; and when R1, R2 and R3 are H, there are double bonds at positions 20(21) and 24(25); and when R1 is H, R2 is OH and R3 is OH, there are double bonds at positions 20(22) and 25(26); and when R1 is H, R2 is OH and R3 is H, there are double bonds at positions 20(22) and 24(25); and when R1 is glc, R2 is H and R3 is H, there are double bonds at positions 20(21) and 24(25); and when R1 is glc^{1-2}glc, R2 is H and R3 is H, there are double bonds at positions 20(22) and 24(25); and pharmaceutically acceptable compositions incorporating said sapogenins.

2. A sapogenin as claimed in claim 1 wherein R1, R2 and R3 are H, and there are double bonds at 20(21) and 24(25).

3. A sapogenin as claimed in claim 1 wherein R1 is H, R2 and R3 are OH, and there are double bonds at 20(22) and 25(26).

4. A sapogenin as claimed in claim 1 wherein R1 is H, R2 is OH and R3 is H, and there are double bonds at 20(22) and 24(25).

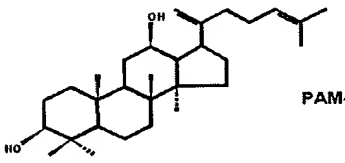
5. A sapogenin as claimed in claim 1 wherein R1 is glc, R2 and R3 are H, and there are double bonds at 20(21) and 24(25).

6. A sapogenin as claimed in claim 1 wherein R1 is $glc^{1-2}glc$, R2 and R3 are H, and there are double bonds at 20(22) and 24(25).

7. The use of a sapogenin according to the formula recited in claim 1 in treating cancer cells in a human being suffering from cancer, comprising killing cancer cells, inducing apoptosis in cancer cells, or inhibiting multiplication of cancer cells, or any combination thereof.

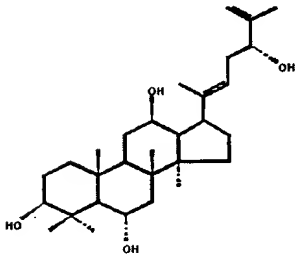
8. The use of a sapogenin according to the formula recited in claim 1 in treating multi-drug resistant cancer cells (MDR) in a human being suffering from cancer, comprising using the sapogenins either singly, or in combination with one another, or in combination with other chemotherapy agents.

9. A sapogenin according to the formula:



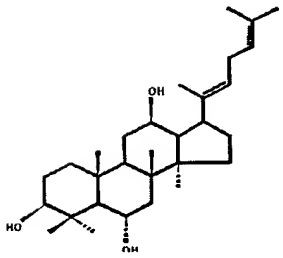
PAM-120

10. A sapogenin according to the formula:



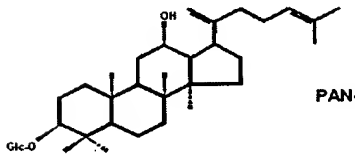
PBM-100

11. A sapogenin according to the formula:



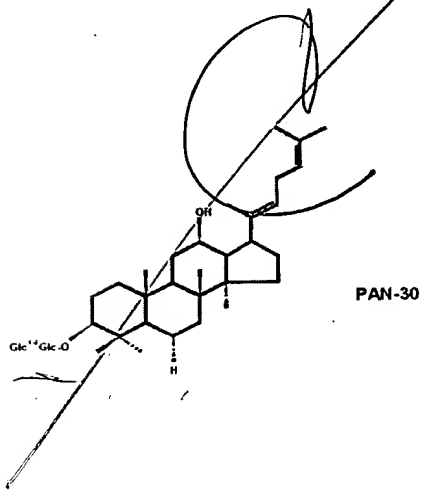
PBM-110

12. A sapogenin according to the formula:



PAN-20

13. A sapogenin according to the formula:



PAN-30

14. A method of treating cancer in human beings or other animals suffering from cancer comprising administering to said human beings a therapeutically effective amount of a composition comprising one or more of PAM-120, PBM-100 and PBM-110.

15. A method of treating cancer in human beings or other animals suffering from cancer comprising administering to said human beings a therapeutically effective amount of a composition comprising one or more of PAN-20 and PAN-30.

16. The cancer-treatment method of claim 14 comprising a pharmaceutically effective amount of PAM-120, PAM-100 and PBM-110 with or without one or more pharmaceutically acceptable carriers, and one or more chemotherapeutic agents.

17. The cancer-treatment method of claim 14, wherein the active ingredient is administered in a dosage of between 5 micrograms to 50 grams per kg body weight per day.

18. The cancer-treatment method of claim 14, wherein the active ingredient is administered in a dosage of between 50 micrograms to 5 grams per kg body weight per day.

19. The cancer-treatment method of claim 17, wherein the form of the composition is selected from the group consisting of an orally administrable form, an injectable form, and a topically applicable form.

20. The cancer-treatment method of claim 19, wherein the orally administrable form is selected from the group consisting of a tablet, a powder, a suspension, an emulsion, a capsule, a granule, a troche, a pill, a liquid, a spirit, a syrup and a lemonade.

21. The cancer-treatment method of claim 19, wherein the injectable form is selected from the group consisting of a liquid, a suspension and a solution.

22. The cancer-treatment method of claim 19, wherein the topically applicable

form is selected from the group consisting of a drop, a paste, an ointment, a liquid, a powder, a plaster, a suppository, an aerosol, a liniment, a lotion, an enema and an emulsion.

23. The cancer-treatment method of claims 14 or 15, wherein the composition is administered to human beings who are receiving one or more other anti-cancer treatments.

24. The cancer-treatment method in claims 14 or 15, wherein the composition is formulated with one or more other anti-cancer agents, for additive treatment effects, or synergistic treatment effects on multi-drug resistance cancers or any other cancer type.

25. A process of preparing a sapogenin as claimed in claim 1 which comprises producing a ginsenoside extract from plants selected from the group consisting of panax ginseng, panax quinguefol and panax notoginseng, or a sapogenin source from some other plant, and proceeding according to the following steps:

(a) mixing the ginsenoside extract with water;

(b) (i) mixing the ginsenoside extract and water with a short-chain (1-5 carbon) alkali-metal alcoholate solution or a hydroxide-ethanol solution to produce a mixture; and

(ii) placing the resultant mixture in a reaction tank so that the resultant mixture can undergo chemical reactions under required high temperature and high pressure; or

(c) (i) alternatively, mixing the ginsenosides extract with ethanol;

(ii) mixing the extract and ethanol with alkali-metal alcoholates solution to produce a mixture, and

(iii) placing the resultant mixture in a reaction tank so that the resultant mixture can undergo chemical reactions under required high temperature and high pressure;

(d) after the reaction is completed, collecting an intermediate product of a mix of gensenosides and sapogenins from the ethanol mixture; and

(e) separating the desired sapogenins from the intermediate saponin-sapogenin mixture by silica-gel-column chromatography.

26. A process as claimed in claim 25 wherein the alkali metal can be

potassium or sodium.

27. A process as claimed in claim 25 wherein the hydroxide can be sodium hydroxide or potassium hydroxide.

28. A process as claimed in claim 25 wherein the alkali-metal alcoholates solution or the concentration of hydroxide-ethanol solution is 5~50% (W/V).

29. A process as claimed in claim 25 wherein the ethanol has 1~5 carbon atoms.

30. The process as claimed in claim 25 wherein the temperature of the reaction tank is between 150~300°C and the reaction pressure is between 2.5~8.4 MPa.

31. A process of preparing a sapogenin as claimed in claim 1 which comprises producing a ginsenoside extract from plants selected from the group consisting of panax ginseng, panax quinguefol and panax notoginseng, and proceeding according to the following steps:

(a) mixing the ginsenoside extract with water;

(b) mixing the ginsenoside extract and water with a short-chain (1-5 carbon) alkali-metal alcoholate solution or a hydroxide-ethanol solution to produce a mixture; and

(c) placing the resultant mixture in a reaction tank so that the resultant mixture can undergo chemical reactions under required high temperature and high pressure; or

(d) after the reaction is completed, collecting an intermediate product of a mix of gensenosides and sapogenins from the ethanol mixture; and

(e) separating the desired sapogenins from the intermediate saponin-sapogenin mixture by silica-gel-column chromatography.

32. A process of preparing a sapogenin as claimed in claim 1 which comprises producing a ginsenoside extract from plants selected from the group consisting of panax ginseng, panax quinguefol and panax notoginseng, and proceeding according to the following steps:

(a) mixing the ginsenoside extract with water;

(b) alternatively, mixing the ginsenosides extract with ethanol;

(c) mixing the extract and ethanol with alkali-metal alcoholates solution to produce a mixture, and

(d) placing the resultant mixture in a reaction tank so that the resultant mixture can undergo chemical reactions under required high temperature and high pressure;

(e) after the reaction is completed, collecting an intermediate product of a mix of gensenosides and sapogenins from the ethanol mixture; and

(f) separating the desired sapogenins from the intermediate saponin-sapogenin mixture by silica-gel-column chromatography.